

STAR Operations Meeting to discuss Commissioning plan
for FY03 pp run
April 3, 2003.

Agenda:

- TCU bits and brief “sketch” of triggers
- V124 channel assignments
- Trigger files and Run Configurations for early commissioning
- Discussion of constraints and considerations for timing in the trigger detectors, and strategy/plan for setting the timing.
- Testing/commissioning plan for FPD
- Strategy and plan for timing in and testing scalers
- AOB relevant to early commissioning work

Level 0 TCU Bits *(4/4/03 version)*

	Set 1	Set 2	Special
bit	pp	Aux (~dAu2)	
0	CTB M>th1	UPC+BBC-Large	bit 0 req
1	FPDE	CTB M>th1	bit 1 req
2	FPDW	FPDW	bit 2 req
3	<BBC TAC>	ZDC E or W >th0	det ID 1
4	BBC E _{small} >th0	BBC E _{small} >th0	det ID 2
5	BBC W _{small} >th0	BBC W _{small} >th0	det ID 3
6	Jet Patch 1-BEMC	J/Psi	det ID 4
7	Jet Patch 2-BEMC	TOF	
8	Hi Tower 1-BEMC	<BBC TAC>	
9	Hi Tower 2-BEMC	FPDE	
10	Jet Patch 1-EEMC	Jet Patch 1	
11	Jet Patch 2-EEMC	Jet Patch 2	
12	Hi Tower 1-EEMC	Hi Tower 1	
13	Hi Tower 2-EEMC	Hi Tower 2	
14	Blue+Yellow	Blue+Yellow	
15	special	special	

BUR Goal	Suggested trigger(s) (Set 1 bits)
Measurement of forward π^0 asymmetries	1 + 3 FPD E 2 + 3 FPD W
Measurement of high pt spectra and transverse single spin effects.	8 (or 9) + 3 HTB 6 (or 7) + 3 JB 12 (or 13) + 3 HTE 10 (or 11) + 3 JE
Measurement of ΔG (2 spin asymmetry)	8 (or 9) + 3 HTB 6 (or 7) + 3 JB 12 (or 13) + 3 HTE 10 (or 11) + 3 JE
Min bias/Vernier scan	3 BBC

Auxillary Goals	Suggested trigger(s) (Set 2 bits)
L2 J/ Ψ	6 + 8
TOF at high pt	7 + 8
UPC	0
Min bias	8

Proposed Assignment of V124 Channels for FY03 Polarized Proton Run

	BLUE	YELLOW
Ch#	Assignment	Assignment
1	Spin +	Spin +
2	Spin -	Spin -
3	Filled	Filled
4	Spin +	Spin +
5	Spin -	Spin -
6	Filled	Filled
7	Revtick(?)	STAR Clock
8	Beam Synch	Beam Synch

Blue/Yellow V124 channels (Last Year):

chn.1 intended bunch fill pattern
chn.2 measured bunch fill pattern
chn.3 spin up
chn.4 spin down
chn.5 zero polarisation
chn.6 bunch 1

Trigger files and Run Configurations for early commissioning

Goal here is to identify tier 1 files to be used, and set up Run Configuration files that point to these files and has defined “labels” for registers, that can be used for pp Commissioning.

Strawman proposal:

Run Configuration name	Tier one file name
Pp Pedestals	?
Pp Setup	?
pp Auxillary	?
Other(s)?	

Discussion of constraints and considerations for timing in the trigger detectors, and strategy/plan for setting the timing.

- Assumption is that we'll have to adjust the fine delay of the STAR Clock V124 Ch (Ch#7 Yellow) to get trigger det. Analog signals back in ADC gates.
 - After we'd fixed timing for dAu it was determined that we couldn't adjust the gate optimally to get the BBC "event" and background signals simultaneously. As BBC is primary collision trigger for pp, assumption is that we optimize timing for BBC. Any issues about this?
 - What are constraints in getting the BBC, ZDC, CTB, and FPD signals all timed in simultaneously:
 - e.g. ZDC and BBC in same digitizer crate (common TCD delay)? Others?
- Can we use information gained by retiming trigger detectors to adjust BEMC and EEMC timing?
- How do we adjust delay of "Revtick" to synch bunch counting for the two rings?
- Other issues?

Testing/commissioning plan for FPD

The FPDs are key elements in the physics plan. First order issues that come to mind are getting digitizer boards/channels working, getting trigger data integrity checked, getting gains matched, and getting analog signals timed in.

Questions:

- How early in the FPD testing/debugging effort do we need to be able to trigger on the FPD?
- What has to be done before we'll understand any issues relevant to setting and fixing the overall STAR clock timing?
- At present, the FPD E & W have different readout electronics, some hope to have common readout before physics run. Is plan to concentrate exclusively on FPD E during early commissioning efforts?
- Other issues or questions? Support necessary for early efforts?

Strategy and plan for timing in and testing scalers

Spin Scaler Inputs

bit	Luminosity	BBC Asymmetry	FPD Asymmetry
0	BBC TAC-Window 0	BBC:E T	BBC Tac-Window 0
1	BBC TAC-Window 1	BBC:E B	max FPD sum>th1
2	BBC:E(small) ADC>th0	BBC:E N	max FPD sum>th2
3	BBC:W(small) ADC>th0	BBC:E S	max FPD sum>th3
4	BBC:E(small) ADC>th1	BBC:W T	max FPD sum>th4
5	BBC:W(small) ADC>th1	BBC:W B	FPD:E(top)>N
6	BBC:E(large) ADC>th0	BBC:W N	FPD:E(bot)>N
7	BBC:W(large) ADC>th0	BBC:W S	FPD:E(North)>N
8	ZDC TAC-Window 0	BBC:E inner ADC>th0	FPD:E(South)>N
9	ZDC: E ADC>th0	BBC:W inner ADC>th0	FPD:W(top)>N
10	ZDC: E ADC>th1	BBC:E outer ADC>th0	FPD:W(bot)>N
11	ZDC: W ADC>th0	BBC:W outer ADC>th0	FPD:W(North)>N
12	ZDC: W ADC>th1	BBC:E large ADC>th0	FPD:W(South)>N
13	EMC: Energy>th0	BBC:W large ADC>th0	max FPD Tower ID1
14	EMC: Energy>th1	ZDC TAC-Window 0	max FPD Tower ID2
15	CTB: M>th0	EMC: Energy>th0	max FPD Tower ID3
16	CTB: M>th1	CTB: M>th1	max FPD Tower ID4
17	BX0	BX0	BX0
18	BX1	BX1	BX1
19	BX2	BX2	BX2
20	BX3	BX3	BX3
21	BX4	BX4	BX4
22	BX5	BX5	BX5
23	BX6	BX6	BX6

These are set up in pairs, reading one of the pair every 2 minutes and storing the data in the database with a timestamp.

Other Issues that people would like to bring up relevant to early
Commissioning efforts